



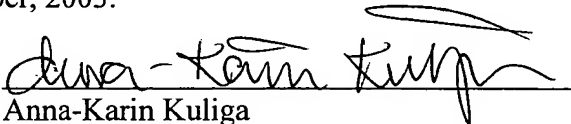
PATENT
Attorney Docket No.: MLB-066C2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Griffith et al.
SERIAL NO.: 10/646,146 GROUP NO.: Not Yet Assigned
FILING DATE: August 22, 2003 EXAMINER: Not Yet Assigned
TITLE: METHODS AND APPARATUS FOR MANUFACTURING ELECTRONIC
AND ELECTROMECHANICAL ELEMENTS AND DEVICES BY THIN-FILM
DEPOSITION AND IMAGING

CERTIFICATE OF FIRST CLASS MAILING UNDER 37 C.F.R. 1.8

I hereby certify that this correspondence, and any document(s) referred to as enclosed herein, is/are being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450 on this 10th day of December, 2003.


Anna-Karin Kuliga

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Sir:

Submitted herewith are:

1. Transmittal Form (1 page);
2. Information Disclosure Statement (2 pages);
3. Form PTO-1449 (3 pages); and
4. References cited (A1-A6, B1 and C1-C39); and
5. Return receipt postcard.



TRANSMITTAL FORM

Application Serial Number	10/646,146
Filing Date	August 22, 2003
First Named Inventor	Griffith
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket No.	MLB-066C2
Patent No.	Not applicable
Issue Date	Not applicable

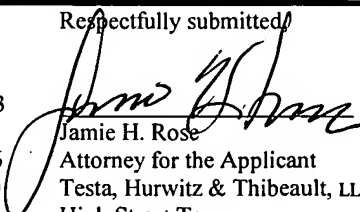
ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Check Attached <input type="checkbox"/> Copy of Fee Transmittal Form	<input type="checkbox"/> Copy of Notice to File Missing Parts of Application (PTO-1553)	<input type="checkbox"/> Notice of Appeal to Board of Patent Appeals and Interferences
<input type="checkbox"/> Amendment/Response <input type="checkbox"/> Preliminary <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Letter to Official Draftsperson including Drawings [Total Sheets ____]	<input type="checkbox"/> Formal Drawing(s)	<input type="checkbox"/> Appeal Brief (in triplicate)
<input type="checkbox"/> Petition for Extension of Time	<input type="checkbox"/> Request For Continued Examination (RCE) Transmittal	<input type="checkbox"/> Status Inquiry
<input checked="" type="checkbox"/> Information Disclosure Statement <input checked="" type="checkbox"/> Form PTO-1449 <input checked="" type="checkbox"/> Copies of IDS	<input type="checkbox"/> Power of Attorney (Revocation of Prior Powers)	<input checked="" type="checkbox"/> Return Receipt Postcard
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Certificate of First Class Mailing under 37 C.F.R. 1.8
<input type="checkbox"/> Sequence Listing submission <input type="checkbox"/> Paper Copy/CD <input type="checkbox"/> Computer Readable Copy <input type="checkbox"/> Statement verifying identity of above	<input type="checkbox"/> Executed Declaration and Power of Attorney for Utility or Design Patent Application	<input type="checkbox"/> Certificate of Facsimile Transmission under 37 C.F.R. 1.8
	<input type="checkbox"/> Small Entity Statement	<input type="checkbox"/> Additional Enclosure(s) (please identify below)
	<input type="checkbox"/> CD(s) for large table or computer program	
	<input type="checkbox"/> Amendment After Allowance	
	<input type="checkbox"/> Request for Certificate of Correction <input type="checkbox"/> Certificate of Correction (in duplicate)	

CORRESPONDENCE ADDRESS

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SIGNATURE BLOCK

Respectfully submitted,

Date: December 10, 2003
Reg. No. 45,054
Tel. No.: (617) 248-7376
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PATENT
Attorney Docket No. MLB-066C2
(6992/64)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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TITLE: METHODS AND APPARATUS FOR MANUFACTURING
ELECTRONIC AND ELECTROMECHANICAL ELEMENTS
AND DEVICES BY THIN-FILM DEPOSITION AND IMAGING

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with the provisions of 37 C.F.R. 1.97 and 1.98, Applicants hereby make of record the patents and publications listed on the accompanying Form PTO-1449, and other information contained herein, for consideration by the Examiner in connection with the examination of the above-identified patent application. Copies of the patents and publications are enclosed.

REMARKS

In accordance with the provisions of 37 C.F.R. 1.97, this statement is being filed (CHECK ONE):

- ☒ (1) within three (3) months of the **filing date** of a national application other than a continued prosecution application under 37 C.F.R. 1.53(d), or within three (3) months of the **date of entry of the national stage** as set forth in 37 C.F.R. 1.491 in an international application, or before the mailing of the **first Office action** on the merits, or before the mailing of a **first Office action** after the filing of a request for continued examination under 37 C.F.R. 1.114; or
- ☐ (2) after the period defined in (1) but before the mailing date of a **final action** or a **notice of allowance** under 37 C.F.R. 1.311, and
- ☐ the requisite Statement is below, **OR**
- ☐ the requisite fee under 37 C.F.R. 1.17(p), namely **\$180.00**, is included herein, or

- ☐ (3) after the mailing date of a **final action** or **notice of allowance** but before the payment of the **issue fee**, **AND**
- ☐ the requisite Statement is below, **AND**
- ☐ the requisite petition fee under 37 C.F.R. 1.17(p), namely **\$180.00** is included herein.

It is respectfully requested that each of the patents and publications listed on the attached Form PTO-1449, and other information contained herein, be made of record in this application.

STATEMENT

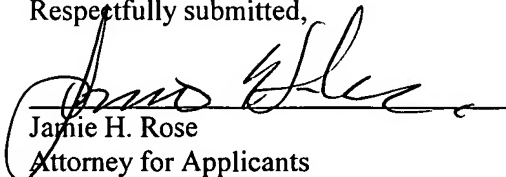
As required under 37 C.F.R. 1.97(e), Applicant(s), through the undersigned, hereby state either that [check the appropriate space only if either (2) or (3) is checked on the previous page and the Statement is required]:

- ☐ 1. Each item of information contained in the Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application **not more than three months** prior to the filing of the Information Disclosure Statement; or
- ☐ 2. No item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this Statement after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to **any individual** designated in 37 C.F.R. 1.56(c) **more than three months** prior to the filing of the Information Disclosure Statement.

Date: December 10, 2003
Reg. No. 45,054

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Respectfully submitted,


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FORM PTO - 1400 INFORMATION DISCLOSURE STATEMENT				ATTORNEY DOCKET NO.: MLB-066C2 APPLICANT(S): Griffith et al. SERIAL NO.: 10/646,146 FILING DATE: August 22, 2003 GROUP: Not Yet Assigned					
U.S. PATENT DOCUMENTS									
EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE		
	A1	4,298,448	11/03/81	Muller et al.					
	A2	5,066,559	11/19/91	Elmasry et al.					
	A3	5,380,362	01/10/95	Schubert					
	A4	5,559,057	09/24/96	Goldstein					
	A5	5,587,111	12/24/96	Watanabe et al.					
	A6	5,751,018	05/12/98	Alivisatos et al.					
FOREIGN PATENT DOCUMENTS									
EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)
✓	B1	WO 97/38810	10/23/97	PCT				N	Y
OTHER ART, JOURNAL ARTICLES, ETC.									
EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)								
✓	C1	Guo et al., "A Room-Temperature Silicon Single-Electron Metal-Oxide-Semiconductor Memory With Nanoscale Floating-Gate and Ultranarrow Channel," Appl. Phys. Lett. 70 (7), pp. 850-852, February 17, 1997.							
✓	C2	Zhuang et al., "Silicon Single-Electron Quantum-Dot Transistor Switch Operating at Room Temperature," Applied Physics Letters, Vol. 72, No. 10, pp. 1205-1207, March 9, 1998.							
✓	C3	Guo et al., "Fabrication and Characterization of Room Temperature Silicon Single Electron Memory," J. Vac. Sci. Technol. B 15 (6), pp. 2840-2843, Nov./Dec. 1997.							
✓	C4	Yano et al., "SA 21.7:A 128 Mb Early Prototype for Gigascale Single-Electron Memories," IEEE International Solid-State Circuits Conference, 1998.							
✓	C5	Ishii et al., "Verify: Key to the Stable Single-Electron-Memory Operation," IEEE, IEDM 97, pp. 171-174, 1997.							
✓	C6	Yano et al., "FP 16.4: Single-Electron-Memory Integrated Circuit for Giga-to-Tera Bit Storage," IEEE International Solid-State Circuits Conference, 1996.							
✓	C7	Nakajima et al., "Room Temperature Operation of Si Single-Electron Memory with Self-Aligned Floating Dot Gate," IEDM 96, pp. 952-954, 1996.							
✓	C8	Tiwari et al., "Technology and Power-Speed Trade-Offs in Quantum-Dot and Nano-Crystal Memory Devices," Symposium on VLSI Technology Digest of Technical Papers, pp. 133-134, 1997.							



<p>FORM PTO - 1549</p> <p>INFORMATION DISCLOSURE STATEMENT</p>		<p>ATTORNEY DOCKET NO.: MLB-066C2</p> <p>APPLICANT(S): Griffith et al.</p> <p>SERIAL NO.: 10/646,146</p> <p>FILING DATE: August 22, 2003 GROUP: Not Yet Assigned</p>
✓	C9	Bhyrappa et al., "Hydrogen-Bonded Porphyrinic Solids: Supramolecular Networks of Octahydroxy Porphyrins," J. Am. Chem. Soc., Vol. 119, 8492-8502, 1997.
✓	C10	Zollinger, <u>Color Chemistry</u> , 2 nd Ed., Weinheim, New York, pp. 352-361, 1991.
✓	C11	Murray et al., "Self-Organization of CdSe Nanocrystallites Into Three-Dimensional Quantum Dot Superlattices," Science, Vol. 270, pp. 1335-1338, November 24, 1995.
✓	C12	Terris et al., "Near-Field Optical Data Storage Using a Solid Immersion Lens," Appl. Phys. Lett., Vol. 65, No. 4, pp. 388-390, July 25, 1994.
✓	C13	Markovich et al., "Parallel Fabrication and Single-Electron Charging of Devices Based on Ordered, Two-Dimensional Phases of Organically Functionalized Metal Nanocrystals," Appl. Phys. Lett. 70 (23), pp. 3170-3109, June 9, 1997.
✓	C14	Yoo et al., "Scanning Single-Electron Transistor Microscopy: Imaging Individual Charges," Science, Vol. 276, pp. 579-582, April 25, 1997.
✓	C15	Schoelkopf et al., "The Radio-Frequency Single-Electron Transistor (RF-SET): A Fast and Ultrasensitive Electrometer," Science, Vol. 280, pp. 1238-1242, May 22, 1998.
✓	C16	Shum et al., "A Concept for Nonvolatile Memories," Appl. Phys. Lett., 71 (17), pp. 2487-2489, October 27, 1997.
✓	C17	Tayaoka et al., "Preparation of Co-Fe-P Amorphous Fine Needles With Anodization Technique and Measurement of Demagnetizing Factor," J. Appl. Phys. 79 (8), pp. 6016-6018, April 15, 1996.
✓	C18	Meier et al., "Magnetic Properties of Nanosized Wires," J. Appl. Phys. 79 (8), pp. 6010-6012, April 15, 1996.
✓	C19	Lafdi et al., "Cobalt-Doped Carbon Nanotubes: Preparation, Texture, and Magnetic Properties," J. Appl. Phys. 79 (8), pp. 6007-6009, April 15, 1996.
✓	C20	Mamin et al., "High-Density Data Storage Using Proximal Probe Techniques," IBM J. Res. Develop., Vol. 39, No. 6, pp. 681-699, November 6, 1995.
✓	C21	Masumoto et al., "Room Temperature Operation of a Single Electron Transistor Made by the Scanning Tunneling Microscope Nanooxidation Process for the TiOx/Ti System," Appl. Phys. Lett., 68 (1), pp. 34-36, January 1, 1996.
✓	C22	Terris et al., "Data Storage in NOS: Lifetime and Carrier-to-Noise Measurements," IEEE Transactions on Electron Devices, Vol. 42, No. 5, pp. 944-949, May 5, 1995.
✓	C23	Snow et al., "A Metal/Oxide Tunneling Transistor," Appl. Phys. Lett., 72 (23), pp. 3071-3073, June 8, 1998.
✓	C24	Minne et al., "Automated Parallel High-Speed Atomic Force Microscopy," Appl. Phys. Lett., 72 (18), pp. 2340-2342, May 4, 1998.
✓	C25	Celotta et al., "Nanostructure Fabrication Via Laser-Focused Atomic Deposition (Invited)," J. Appl. Phys. 79 (8), pp. 6079-6083, April 15, 1996.
✓	C26	Krebs et al., "Perpendicular Transport and Magnetic Properties in Patterned Multilayer Magnetic Microstructures (Invited)," J. Appl. Phys. 79 (8), pp. 6084-6089, April 15, 1996.



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INFORMATION DISCLOSURE STATEMENT		APPLICANT(S): Griffith et al.
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✓	C27	Doudin et al., "Arrays of Multilayered Nanowires (Invited)," J. Appl. Phys. 79 (8), pp. 60909-6094, April 15, 1996.
✓	C28	Gadetsky et al., "Magneto-Optical Recording on Patterned Substrates (Invited)," J. Appl. Phys. 79 (8), pp. 5687-5692, April 15, 1996.
✓	C29	Bessho et al., "Fabricating Nanoscale Magnetic Mounds Using a Scanning Probe Microscope," J. Appl. Phys. 79 (8), pp. 5057-5059, April 15, 1996.
✓	C30	Leslie-Pelecky et al., "Self-Stabilized Magnetic Colloids: Ultrafine CO particles in Polymers," J. Appl. Phys. 79 (8), pp. 5312-5314, April 15, 1996.
✓	C31	Johnson et al., "Finite Size Effects in Nanoscale Tb Particles," J. Appl. Phys. 79 (8), pp. 5299-5301, April 15, 1996.
✓	C32	O'Barr et al., "Preparation and Quantitative Magnetic Studies of Single-Domain Nickel Cylinders," J. Appl. Phys. 79 (8), pp. 5303-5305, April 15, 1996.
✓	C33	Levy et al., "Femtosecond Near-Field Spin Microscopy in Digital Magnetic Heterostructures (Invited)," J. Appl. Phys. 79 (8), pp. 6095-6100, April 15, 1996.
✓	C34	Chou et al., "65 Gbits/in. ² Quantum Magnetic Disk (Abstract)," J. Appl. Phys. 79 (8), p. 5066, April 15, 1996.
✓	C35	Chou et al., "Nanolithographically Defined Magnetic Structures and Quantum Magnetic Disk (Invited)," J. Appl. Phys. 79 (8), pp. 6101-6106, April 15, 1996.
✓	C36	Alivisatos, "Electrical Studies of Semiconductor-Nanocrystal Colloids," MRS Bulletin, pp. 18-23, February 1998.
✓	C37	Xia et al., "Soft Lithography," Angew. Chem. Int. Ed., Vol. 37, pp. 551-575, 1998.
✓	C38	Rosa et al., Direct Patterning of Surface Quantum Wells With An Atomic Force Microscope," Appl. Phys. Lett., 73 (18), pp. 2684-2686, November 2, 1998.
✓	C39	Schamp et al., "Improved efficiencies in light emitting diodes made with CdSe (CdS) core/shell type nanocrystals and a semiconducting polymer," J. Appl. Phys., 82 (11), pp. 5837-5842, December 1, 1997.
EXAMINER		DATE CONSIDERED

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